Supplementary materials

*Human Performance Assessment of Multi-Organ Retrieval in High and Low Demand Simulations*

## Methodology

### *Additional Notes on Measures*

This study utilised the NOTSS system as this was developed using a multi-disciplinary group, and based on cognitive task analysis with consultant surgeons, adverse event reports, and observations of surgeons' behaviour in theatre. Moreover, NOTSS and SPLINTS were developed in the UK and have received an official endorsement from the Royal College of Surgeons of Edinburgh.

The MRF was specifically designed for use within performance contexts and provides an expedient and minimally intrusive measurement of mental readiness.

The RSME has undergone extensive validation, and has shown acceptable reliability in a range of laboratory (r = 0.88) and field (r = 0.78) settings. This scale has correlated strongly with validated psycho-physiological measures of mental load and is quick to complete providing minimum interruption to the flow of the event.

The validation of TEAM has been conducted in both live and simulated environments, and has shown that all items had a content validity index greater than 0.83 and a total item content validity of 0.96. Moreover, this assessment tool was selected for ease of use and quick completion time.

Each source of workload on NASA TLX scale was rated on a 20-point scale (High to Low) to reflect the magnitude of the source in a given task. This number was then multiplied by a weighting (range 0 - not relevant, to 5 - more important than any other source) to produce a total workload score for each source. Weights were determined for each task through presenting the participant with the pairings of factors and asking to indicate which one contributed more to the workload.

Social validation was used to determine satisfaction with the training intervention by determining if participants: (a) perceived the task to be important (intervention goal relevant); (b) thought the procedures were acceptable; (c) felt satisfied with results.